



# Lecture 5: Aristotle on Substance and Change



## A philosopher and a scientist

Aristotle was a student of Plato, and much of his philosophy is influenced by this. Some ideas from Plato are developed in a different direction, others are criticised. While Plato was concerned with the unchanging, ideal part of reality, Aristotle was more interested in the changing world that we live in.

Plato's most prominent discipline was mathematics and his world of Forms includes all the geometrical shapes. Aristotle's philosophy was influenced by biology, but his writings also include physics, cosmology, ethics, politics, rhetoric and metaphysics (ontology). His philosophical and scientific ideas remained highly influential through the Enlightenment. In Arabic philosophy, he was called "The First Teacher"; in the West, "The Philosopher."

## The Forms are found in our material world

Aristotle did not reject Plato's idea of Forms; that there is some universal, unifying aspect of all things. E.g. all chairs have the same Form, and a virtuous chair should fulfil its purpose at its best. To Aristotle, Form is related to *function*: a chair should be sat on. If it doesn't function as a chair, it's a poor chair.

The Form of a chair is not its shape, but rather what makes us *classify* it as a Chair. X is a Chair, means that X has the Form of Chair. This is the same for Plato and Aristotle. Contra Plato, however, Aristotle thought that the Forms are found in the material objects themselves, not in the world of Forms. Nothing can have Form unless it is also material.

Plato's Forms are not possible to see or touch. But Aristotle's Forms are found in the material world. A chair must be made of something (e.g. tree or metal), otherwise there's no chair. All things have both Form and Matter: Form is what makes it the kind of thing it is: its *classification, function or essence*. Matter is what makes it an *individual or particular* thing.

## An ontology of Substances (Being) and change (Becoming)

Aristotle was interested in traditional ontology (ARCHÉ): the universal, eternal, unchanging, underlying essences of things. This he shared with Plato and the Pre-Socratics. But like Heraclitus, who said that 'everything flows', Aristotle saw change as one of the basic principles of reality. Everything changes. In addition to *Being*, there is also *Becoming*.

There is a problem of change which led some philosophers such as Parmenides to deny change: *What is cannot come to be (since it already is), while nothing can come to be from what is not.* Things are what they are, but they also seem to be on their way to become something else. What they are now, they used not to be. So how can something change, but keep its identity?

When things change, do they lose their identity and become something else instead? When a nut becomes a tree, is this a nut developing into a tree, or does the nut lose or change its essence? Aristotle's ontology is an attempt to understand change, in addition to essences, or substances (*that which is*).

## Potentiality and Actuality

All things, what Aristotle calls *Substances*, must have both Form and Matter. We saw that the Form is related to function or essence. The Form is the true Being of a Substance. But all

Substances also carry within them the potential for change. This potential of Becoming or change lies in the unique Matter.

A tree is a Tree because of its Form, or essence. But because of its unique Matter, it also has the potential to become something else. We could use a tree to build a table. Once we realise this potential, there is a new actuality, a new Form: we have a Table, rather than a Tree. A Table has its own potentials, for dining, working or playing cards, for instance.

We can say that the Form is the *actuality* of a Substance (thing), what it is now, while Matter gives the Substance its *potential* for change, what it can become. Note that Matter is 'one unique piece of matter'. It is not the type of material.

## The 4 types of change

There are 4 types of change. The first 3 are *accidental* and doesn't involve a change in its Substance or essence.

1. Change in *quantity* (size/amount). From heavy rain, the lake gets bigger. A teenager growing taller.
2. Change in *quality* (property). The lake heating up from the sun in the summer. A teenager colouring her hair green.
3. Change in *place* (movement). Water from the lake goes down a small river. A teenager going to a party.
4. *Substantial* change. The coming to be or passing away of a Substance's essence. The lake drying up during drought. A teenager getting killed in a drunk driving accident.

## The 4 causes of change

A nut has a potential to grow into a tree. For this change to happen, 4 causes or conditions must be present. The first two are in Form and Matter and are intrinsic (internal) to the thing:

1. *The Material Cause* is a thing's unique Matter.
2. *The Formal Cause* is a thing's Form, its essence or function.

But a nut won't grow into a tree by itself. There must also be something added externally:

3. *The Efficient Cause* is what we add, or what we do to the thing, to make it change. The nut needs soil, water, light and air to grow into a tree.

But why do this, unless we have an aim, a TELOS? We add soil and water because we want it to turn into a tree, the nut's TELOS:

4. *The Final Cause* is the aim or goal of the change. The final TELEOLOGICAL cause is related to the Form of the Tree. To Aristotle, all things have a TELOS and carry within them this aim that they are moving toward. We can think of TELOS as the ultimate realisation of something's potential.

## Aristotelianism today

DUNAMIS (Greek) = potency, potential, capacity, power, force. POTENTIA (Latin).

In philosophy, Aristotle's idea of DUNAMIS has been used to understand causation, laws of nature and processes of change. It is an attempt to put powers back into nature after the scientific revolution, when the laws of nature took over the active, governing role of pushing passive objects around.

In science, there's a revival of TELOS in neo-Darwinian theories, seeing survival and reproduction as the final causes.

**Discussion questions**

What is Form and Matter for Aristotle?

What is the relation between the two? Use an example.

*In what way is Aristotle's theory of Forms different from Plato's? How are they similar?*

How do Form and Matter relate to potentiality and actuality?

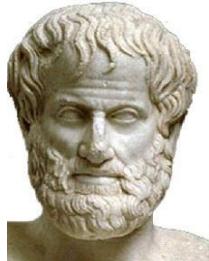
*Aristotle thought of change as an unchanging principle of reality and thus part of the ontology. How is this different from Plato?*

Explain the 4 types of change with a new example.

Explain the 4 causes of change with a new example.

*In what way was Aristotle more concerned with the particular than the general, in comparison with Plato?*

*Which of the two philosophical perspectives do you find more plausible? And which fits best in your own discipline?*



Aristotle 384–322 BC

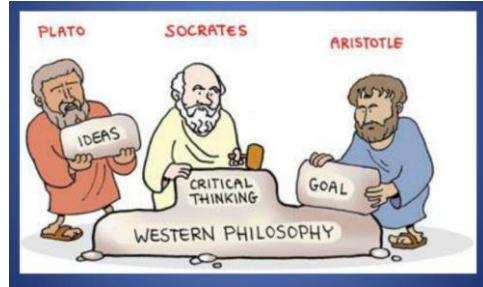
Plato is dear to me, but dearer still is truth.



'The School of Athens', by Raphael. Plato points up toward the world of Forms and Aristotle points out toward this world. We say that Plato was an idealist, while Aristotle was a realist.

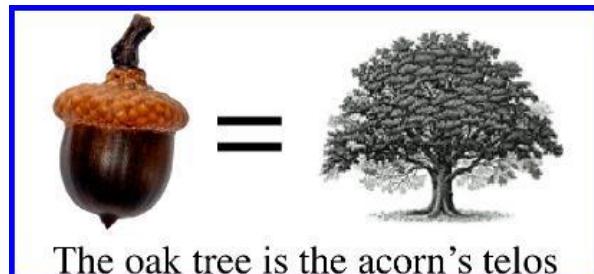


For Aristotle, the only perfect Being with no potential for change, is God. God is pure actuality; the TELOS of all movement in nature. Here, Calvin seems to think there's room for one more perfect Being.



Aristotle's ontology adds TELOS and change. Illustration from <https://www.slideserve.com/sumi/aristotle-s-metaphysics>

**TELOS – the aim that a Substance (=thing) should become:**



The oak tree is the acorn's telos

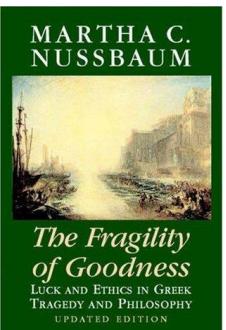
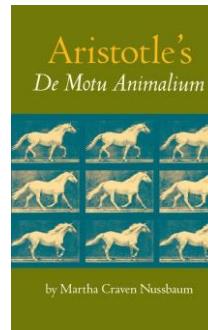
A modern philosopher discusses Aristotle

**Professor Martha Nussbaum**  
(born 1947)

**Winner of the Holberg prize in 2021 for her groundbreaking contribution to research in philosophy, law and related fields.**



Martha C. Nussbaum is the Ernst Freund Distinguished Service Professor of Law and Ethics, a joint appointment in Law and Philosophy, at the University of Chicago, and one of the most productive and well-known philosophers writing today. She has published more than 20 books and 500 academic articles.



From the BBC archives (1987) – a series of 5 videos on Aristotle (38-43 minutes).

<https://cosmolearning.org/documentaries/bryan-magee-talks-to-martha-nussbaum-about-aristotle-860/>